Chapter 17

Canoeing

"The movement of a canoe is like a reed in the wind. Silence is part of it, and the sounds of lapping water, bird songs, and wind in the trees. It is part of the medium through which it floats, the sky, the water, the shores . . . ."

—Sigurd Olsen, *The Singing Wilderness,* 1956 (A naturalist, backcountry traveler, and one of the founding fathers of the Boundary Waters Canoe Area, Olsen received the 1974 John Burroughs Medal, the highest honor in nature writing.)

Perhaps it would be best to discourage you from paddling away in a canoe. Maybe you should be warned not to stow your camping gear beneath its gunwales and aim its bow toward territory you've never seen before. It might be a good idea to discourage you from ever taking a whitewater canoe into the rapids of a wild river. If you don't want to become hooked, stay away from canoes, because once you dip a paddle in the water, your life will change.

Canoeing has been part of the Scouting experience since the earliest days of the Boy Scouts of America. Materials used to build canoes have changed, and so has the world in which people paddle them. The basic skills of canoeing are the same as they have always been, though, and the joy of canoeing is as strong today as ever.

So turn your bow toward open territory. Push off from shore and you could be setting out on a lifelong journey of canoeing adventures that will take you farther, show you more, and bring you a greater abundance of joy than almost any other means of outdoor travel.

"A fine canoe is never the result of chance."

—J. Henry Rushton, 19th-century canoe builder

SAFETY ESSENTIALS FOR CANOEING

For a discussion of safety issues that apply to canoeists, see the chapter titled "Watercraft Adventure Safety."

Canoes

The classic birch-bark canoe is one of our continent's great technological and artistic achievements. American Indians of the northeastern woodlands long ago perfected the art of using split roots to stitch birch bark over wooden frames, then sealing the stitch holes and seams with tree pitch. The results were swift, elegant watercraft ideal for maneuvering on rivers and lakes and for hauling heavy loads. If bark canoes were damaged by rocks or snags, paddlers could find repair materials as close as the next birch tree on shore.

Modern canoes bear a striking resemblance to the design of their birch-bark ancestors, although the materials from which they are made have changed dramatically. By the late 1800s birch-bark canoes were being replaced by canoes made of thin strips of wood carefully fitted together, or of canvas laid over wooden frames and stiffened with lacquer. Aluminum canoes appeared in large numbers after World War II when several aircraft manufacturers retrofitted their production lines to build canoes from metal. Today aluminum is giving way to specialized fabrics, epoxy, vinyl, and resin forming solo and tandem canoes designed for activities ranging from quiet journeys on gentle waters to long-distance wilderness expeditions and runs through the rapids of whitewater rivers.

The canoes you learn to paddle are likely to be whatever boats are handy—the aluminum fleet at a camp or high-adventure base, the canoes of a local watercraft organization, boats available to your family or neighbors. As you move beyond the basics, you might want to find a canoe of a size, material, and design that better matches your activities on the water. Solo canoes, tandems, and canoes outfitted for white water are just a few of the options from which to choose. Don't let a lack of options hold you back,

though. Every canoe floats, and any adventure on the water is better than not going at all. Settle into the best boat you can find, and the rest of the journey will fall into place.

Types of Canoes

Aluminum canoes are durable and relatively inexpensive, factors that make them common at many summer camps. They can be noisy on the water, are often less sophisticated in shape and design than canoes made of other materials, and can get hung up on rocks in shallow passages, but they withstand hard use and are the only canoes that can be stored outdoors for long periods without suffering damage from weather or ultraviolet light.

Fiberglass canoes also are sturdy, but vary widely in weight, quality, and price. Fiberglass can be molded into hull shapes that make good flatwater canoes.

Royalex® canoes are made of *acrylonitrile butadiene styrene,* a material with a strength and flexibility beyond that of aluminum, fiberglass, or polyethylene. These canoes are the choice of many experienced paddlers for running rapids and embarking on extended expeditions. A Royalex® canoe will slide over rocks just beneath the surface of the water without damaging the hull of the canoe.

Polyethylene canoes are tough, economical, and reliable. They are similar in design to Royalex® canoes, but they are heavier and more difficult to repair.

Kevlar® canoes are constructed with layers of Kevlar®, a material also used to make bulletproof vests. Light and expensive, Kevlar® canoes often are finished with a fiberglass skin that is easy to maintain.

Folding canoes can be disassembled and compressed to a size that will fit in the trunk of a car or the cargo hold of a bush plane. Composed of metal or plastic frames covered with sturdy vinyl fabric, folding canoes can be a good solution when reaching the put-in point is as challenging as the journey itself. Well-built folding canoes are surprisingly sturdy and have considerable grace and maneuverability on the water.

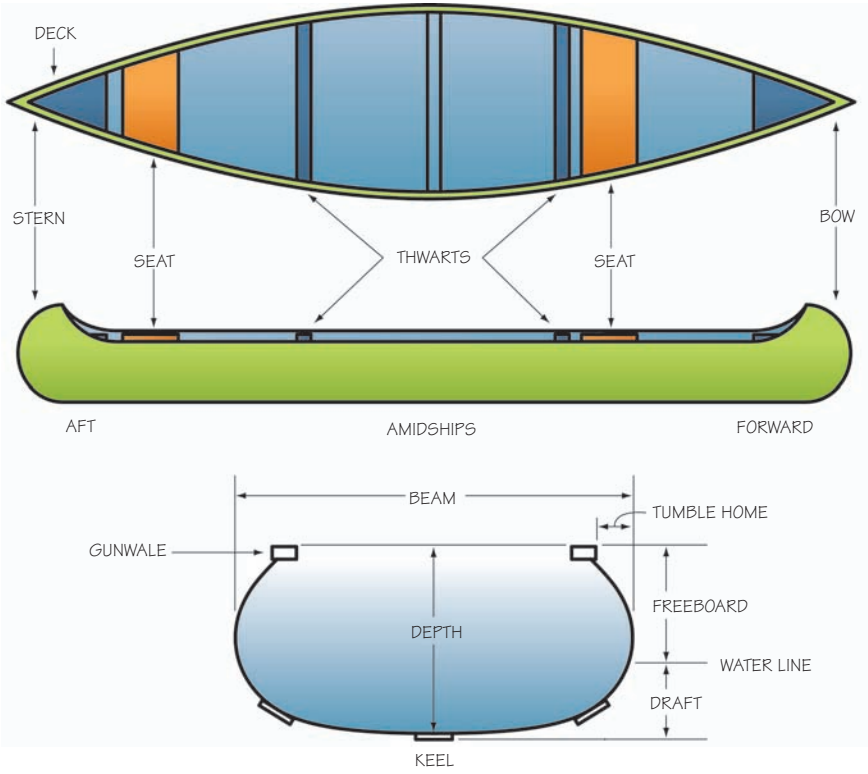
Wood-strip canoes and canvas canoes employing construction methods more than a century old still hold a place in canoeing. Canoes fashioned from strips of cedar sandwiched with fiberglass can be beautiful and capable of high performance. Lacquered canvas over wooden ribs and planks can be challenging for avid watercraft crews to construct and maintain, and a delight to use on the water.

Whitewater Canoes

Long the domain of kayaks and rafts, an increasing number of paddlers are taking on rapids in whitewater canoes built to turn quickly and provide stability through heavy hydraulics. Many whitewater canoes carry flotation bags and have decks—features also found in kayaks. While whitewater canoe designs might vary, the basics of watercraft safety remain the same for any boaters setting out for adventure on rivers and open water.

For more on whitewater considerations, see the chapter titled "Kayaking and Rafting."

Parts of a Canoe



Outfitting Your Canoe

Whether you're setting out for an hour of paddling on a lake, a day of playing in whitewater rapids, or a month of wilderness exploration, your canoe must be outfitted with essentials to propel it and to protect its passengers.

Personal Flotation Device

A personal flotation device (PFD) for each person is as important as any piece of gear you have on the water, perhaps even more vital than the canoe itself. PFDs work only if they are worn and if they fit well. For guidelines on selecting, fitting, and caring for PFDs, see the chapter titled "Watercraft Adventure Safety."

Lines

Any lines on a canoe must float and should be securely stowed when not in use. Those used for tethering gear must be as short as possible so that they cannot become entanglement hazards if the canoe capsizes. *Painters*—lines attached to the bow and stern of a canoe—are helpful for maneuvering the craft through shallow waters and for tying up ashore. Each painter should be half again as long as the canoe to which it is attached.

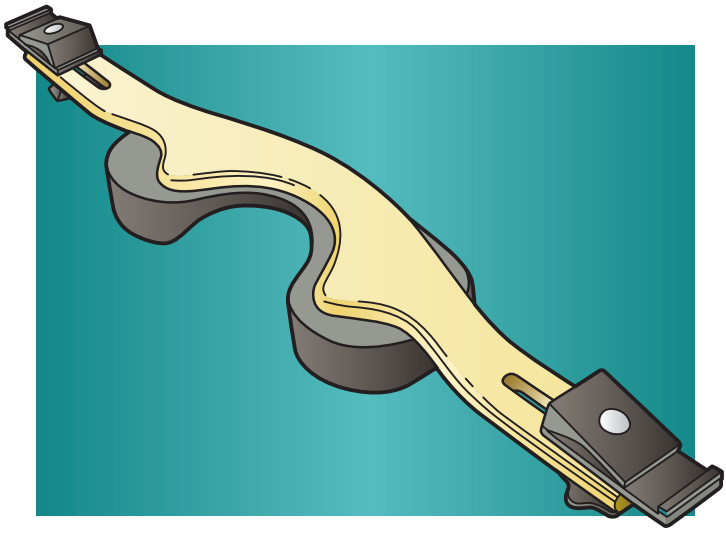
Bailer and Sponge

Canoes are bound to take on some water no matter how calm a lake or stream. A large sponge secured to a thwart with a very short bungee cord is handy for sopping up puddles. You can make a bailer for emptying greater volumes of water from your canoe by cutting a section out of a 1-gallon plastic jug. An ideal way to secure a bailer to a boat is with a plastic buckle. Secure one portion of the buckle to a D-ring cemented to the floor of the boat. Attach the other part of the buckle to the handle of the bailer with no more than an inch or two of slack in the buckle webbing. Clipping the buckle will hold the bailer in the boat when you don't need it, but will keep it readily available for use when you do.

By all means, avoid tying a bailer to your canoe with a long length of cord. A five-cent bailer that snags on submerged rocks can trash a capsized thousand-dollar canoe by anchoring it in a bad spot in the river. Secure bailers—and all other gear—to your canoe with short pieces of line, leaving minimum slack.

Yoke

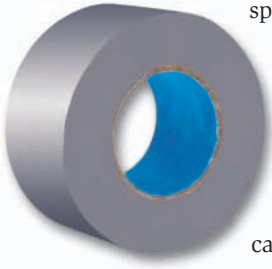
Whether on a long wilderness portage or a short trip down a trail from a road to the edge of a lake, there are going to be times when you carry your canoe. A yoke makes it possible for one person to do that. Some yokes are built into canoes as a center thwart while others can be temporarily clamped to the gunwales. Using a yoke is discussed later in this chapter.



Knee Pads

Knee pads glued into a canoe with contact cement can provide essential comfort during long days of paddling and for strenuous workouts in white water. Pads are commercially available, or can be cut from closed-cell foam sleeping pads.

Duct Tape



Duct tape is handy for everything from repairing torn canoes and splintered paddles to plugging boat leaks and patching the seat of your pants. Stow a roll in your repair kit, or wind some tape around a canoe thwart where it will be handy when you need it. Be sure that the duct tape you carry is waterproof and sturdy enough for watercraft repair.

Paddles

On even the shortest canoe journey, you'll lift your paddle thousands of times, making a lightweight paddle worth plenty. Paddle shape is important, too. Some paddles are noisy in the water, splashing canoeists and providing little propulsion for the effort. Avoid heavy, all-plastic paddles that flex. Other paddles, though, are hydrodynamically gifted, moving through the water as if by magic and giving pleasure with each stroke.

Canoe paddles are made of wood, aluminum, plastic, or combinations of all three. Wooden paddles have a classic look and feel. Shorter blades are best for shallow rivers, while blades that are long and narrow can be quieter and easier to manage, and are ideal for canoeing on lakes. A blade width of seven to eight inches is good for beginners.

The blade of a paddle might be in line with its loom or it might be bent at an angle of up to 15 degrees. Because the paddle remains at a right angle to the surface of the water through most of a forward stroke, a *bent-loom paddle* allows a canoeist to maximize the power of each stroke. Canoeists playing in white water often choose straight-loom paddles for better control.

Sizing a Canoe Paddle

The length of paddle you need depends in large part on the kind of canoeing you will be doing (a solo canoeist might prefer a longer paddle for flat water and a shorter paddle for white water), whether you will be sitting or kneeling in your canoe, and whether the paddle is straight or bent (many bent-loom paddles are sized a little shorter than paddles with straight looms).

To get a general idea of the paddle length that's right for you, take your normal paddling position sitting or kneeling in a floating canoe, then have someone measure the vertical distance from your nose to the surface of the water. That's about the length of the *loom* of your first paddle. Add to that the length of the *blade*—usually another 20 to 25 inches. Lighter paddles are better than heavier ones, if all else is equal. As you gain experience, you will be able to fine-tune paddle size and design to match your needs on the water.

Loading, Launching, and Landing a Canoe

Canoes are creatures of the water. Get them on land or in the transition zone between land and water, and they can be awkward to handle and prone to damage. Before loading and launching a canoe, put on your PFD and shoes that you won't mind getting wet. Team up with another person to lift the canoe by the bow and stern thwarts or decks, then carry it into water deep enough for it to float. Never *bridge* a canoe by resting it on a small section of its bottom or side, and never leave the bow on a dock or the shoreline while the stern is afloat.

A canoe should be in calf-deep water, parallel to the shore as you load it and get aboard. Stow packs, duffels, and dry bags low and close to the middle of the canoe, packing them in tightly and tying them down with short lines so that they will stay in place if the canoe overturns. Hold the craft steady while your partner gets aboard and settled, then place your hands on the gunwales and keep your weight centered and low as you step into the canoe and take your position. Push off and you're on your way.

Land a canoe by reversing the steps of launching. Bring the canoe parallel to the shore and step out of the craft while it is still fully afloat. Stabilize the canoe while your partner disembarks, then remove the paddles and gear before carrying the canoe onto land. Never run the bow of a canoe onto the shore—that's a sure way to cause damage.

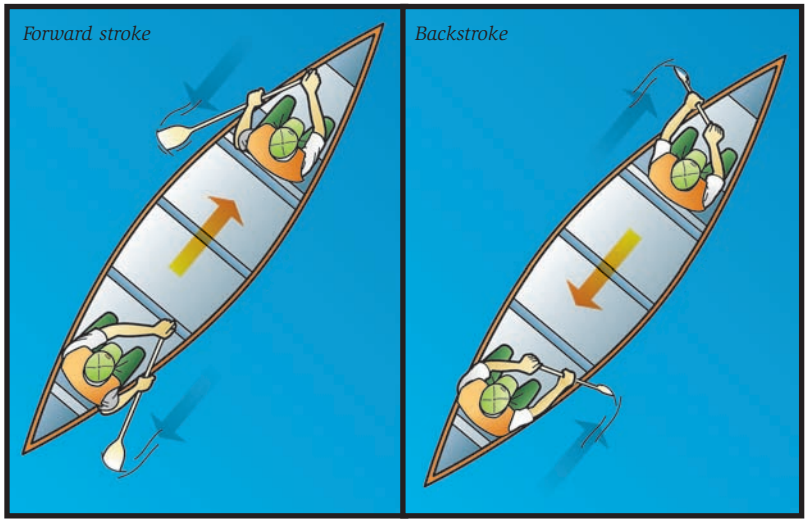
Paddling a Canoe

Good position and body mechanics lead to effective paddling. Whether you canoe with a partner or alone, either kneel in the canoe with your weight against a thwart or the front edge of a seat and your knees wedged against the sides of the craft, or sit solidly on a seat and brace your knees against the gunwales. Think of yourself as a part of the canoe, locked in place. Maintain a smooth rhythm with your paddle, keeping your strokes steady and light. Use your arms to guide your paddle, but power the strokes with the larger muscle groups of your abdomen, shoulders, and back. To maintain a steady pace over long distances, practice the *forward stroke, J-stroke, solo-C stroke,* and *hit-and-switch (Minnesota switch).* To maneuver through currents, eddies, and white water, become familiar with the *backstroke, drawstroke,* and *pry.*

Forward Stroke and Backstroke

Bow paddlers, stern paddlers, and solo canoeists all can use the *forward stroke.* Hold the paddle by the grip and loom, your hands about shoulder-width apart, and twist your torso to move the paddle forward. Keeping your grip hand over the gunwale and lower than the top of your head, submerge the paddle blade, then use the muscles of your abdomen and back to pull the canoe ahead of the paddle. The sensation should be that the paddle remains stationary in the water while the canoe moves to it and then beyond. As it comes out of the water, flip the blade sideways, or *feather* it, so that it will cut through the wind as you swing the paddle ahead to begin the next stroke. Tandem paddlers can synchronize their strokes on opposite sides to keep a canoe running true.

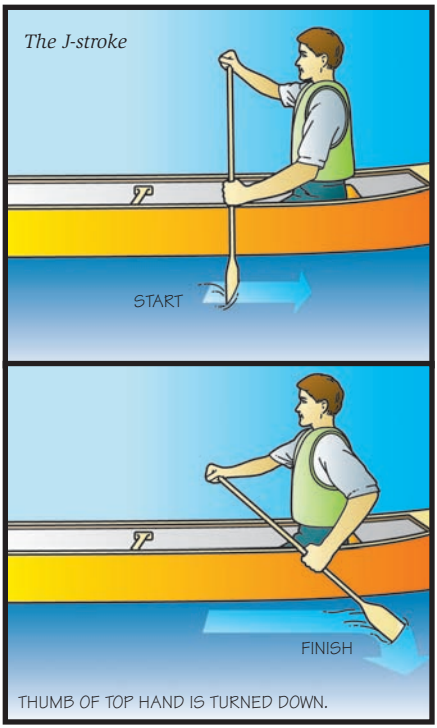
Stop a canoe's forward progress and move it backward by using the *backstroke.* Place the paddle blade in the water near your hip at a right angle to the water. Push forward until paddle comes out of the water. Feather it back to the starting point and repeat the stroke.



J-Stroke

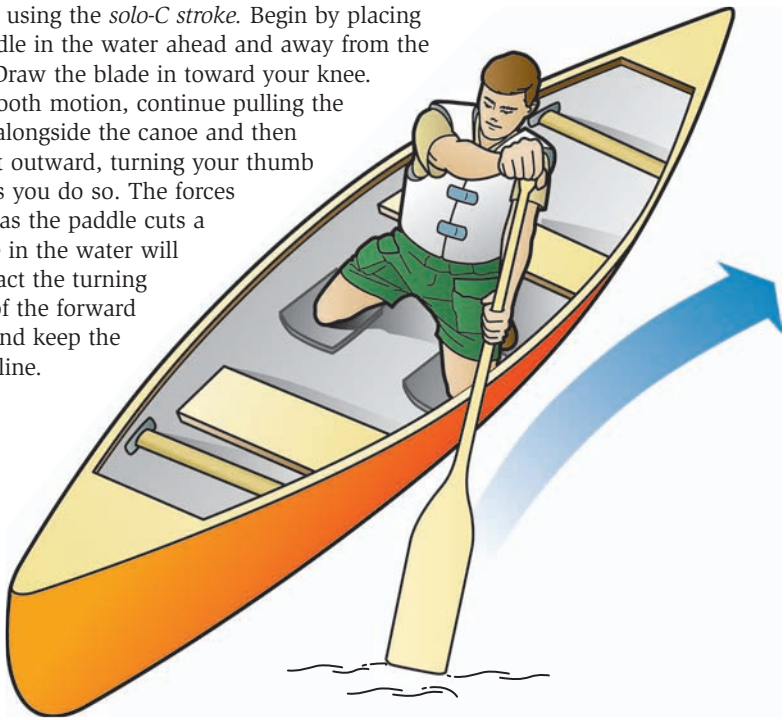
The forward strokes of a paddler in the stern of a canoe will have more effect on the direction a canoe travels than will those of a paddler in the bow, causing the craft to turn away from the strokes of the stern paddler. One way to counteract that mechanical advantage is for the paddler in the stern to use a *J-stroke.*

Begin this stroke as you would a forward stroke. When you have pulled the paddle past your hip, rotate your grip hand so that your thumb rolls down and the paddle blade is vertical. Push the paddle *away from the canoe.* Seen from above, the stroke forms the shape of the letter J, the hook in the J forming as you push the paddle away from the canoe to correct its course.



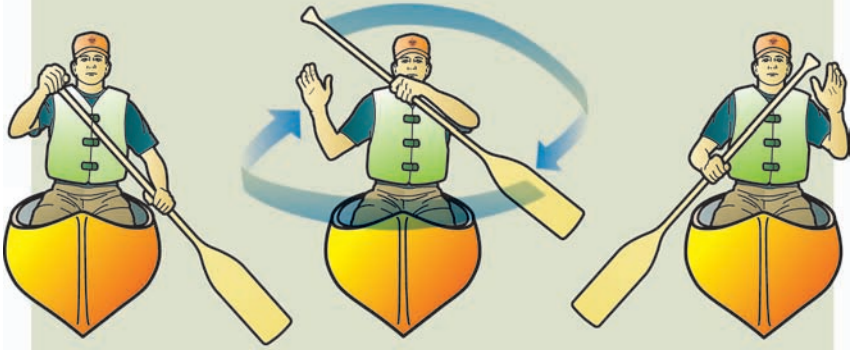
Solo-C Stroke

A solo paddler kneeling in the center of a canoe can steer by using the *solo-C stroke.* Begin by placing the paddle in the water ahead and away from the canoe. Draw the blade in toward your knee. In a smooth motion, continue pulling the paddle alongside the canoe and then sweep it outward, turning your thumb down as you do so. The forces created as the paddle cuts a C shape in the water will counteract the turning power of the forward stroke and keep the craft in line.



Hit-and-Switch (Minnesota Switch)

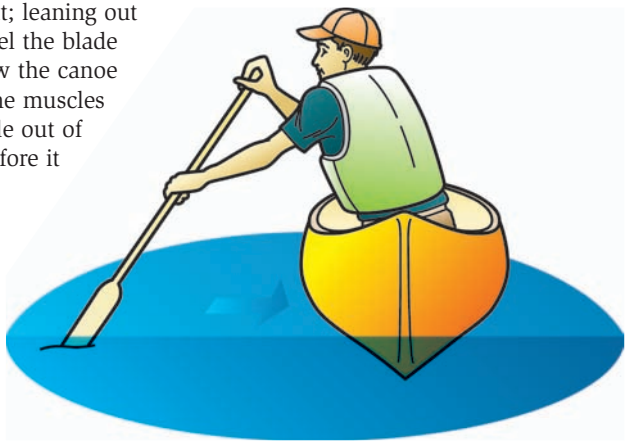
An effective means of maintaining a canoe's bearing is by using a forward stroke and switching your paddle from one side of the craft to the other after every few strokes. In a tandem canoe, the stern paddler calls out, "Hut!" to let the paddler in the bow know they will make the switch before the next stroke so that they always have one paddle on each side of their boat, a technique known as the *hit-and-switch* or *Minnesota switch.* A solo paddler can make the switch whenever the canoe's heading begins to drift. Unlike other forward strokes, paddles are not feathered during these switches.



This means of paddling works well on flat water and when traveling into the wind. Accomplished canoe racers can hit and switch without missing a beat, maintaining a paddling rate of 60 to 70 strokes a minute. The hit-and-switch is not appropriate for white water, though, since during changeovers it leaves canoeists without the stability of paddles in the water serving as braces.

Drawstroke

A *drawstroke* will move your canoe sideways toward the paddle. Keeping the paddle loom vertical and the blade facing the canoe, place the blade into the water. (Keep your center of balance over the center line of your boat; leaning out can capsize the canoe.) Feel the blade stick in the water and draw the canoe toward the paddle using the muscles of your torso. Slip the blade out of the water sideways just before it touches the canoe.



Pry

The *pry* will move your canoe away from the paddling side. Holding the paddle as you would for a drawstroke, slip the blade into the water next to the canoe and pry it away. Though it can be hard on the paddle loom, you can brace the loom against the canoe, using the gunwale as a fulcrum for leveraging the stern away from the blade of the paddle.

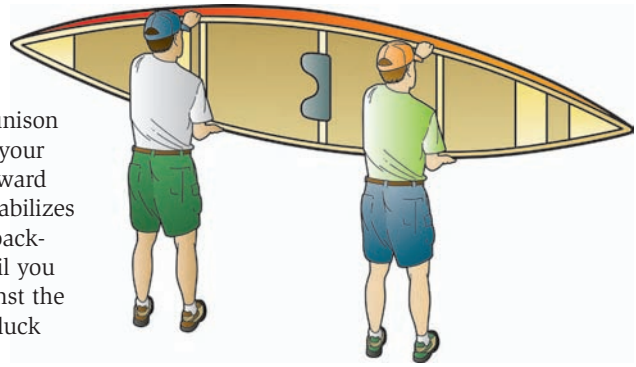
Draw and Pry Combinations

When paddling tandem, draws and prys can be used to move the canoe sideways or spin it in place. If the bow paddler does a draw while the stern paddler does a pry, the canoe will move sideways toward the side of the bow paddle. To move in the opposite direction, reverse the strokes—a pry in the bow and a draw in the stern. To change direction from a stop, you can pivot or spin the canoe in place by both paddlers doing a draw at the same time. To spin in the other direction, both do a pry.

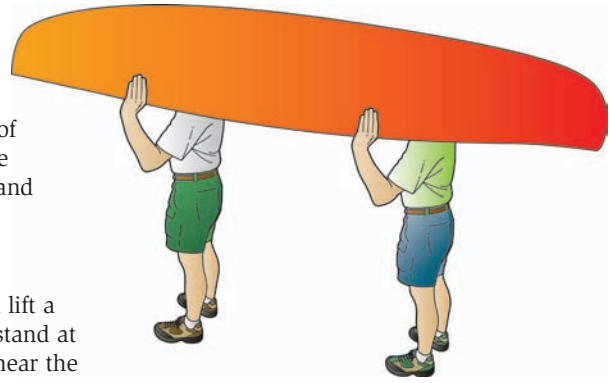
Portaging

Canoes are best carried over long distances by one person, though hoisting overhead for a carry is often better done by a team of two.

Two-Person Portage Lift

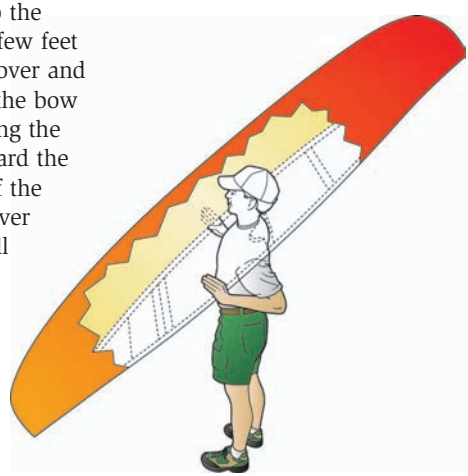


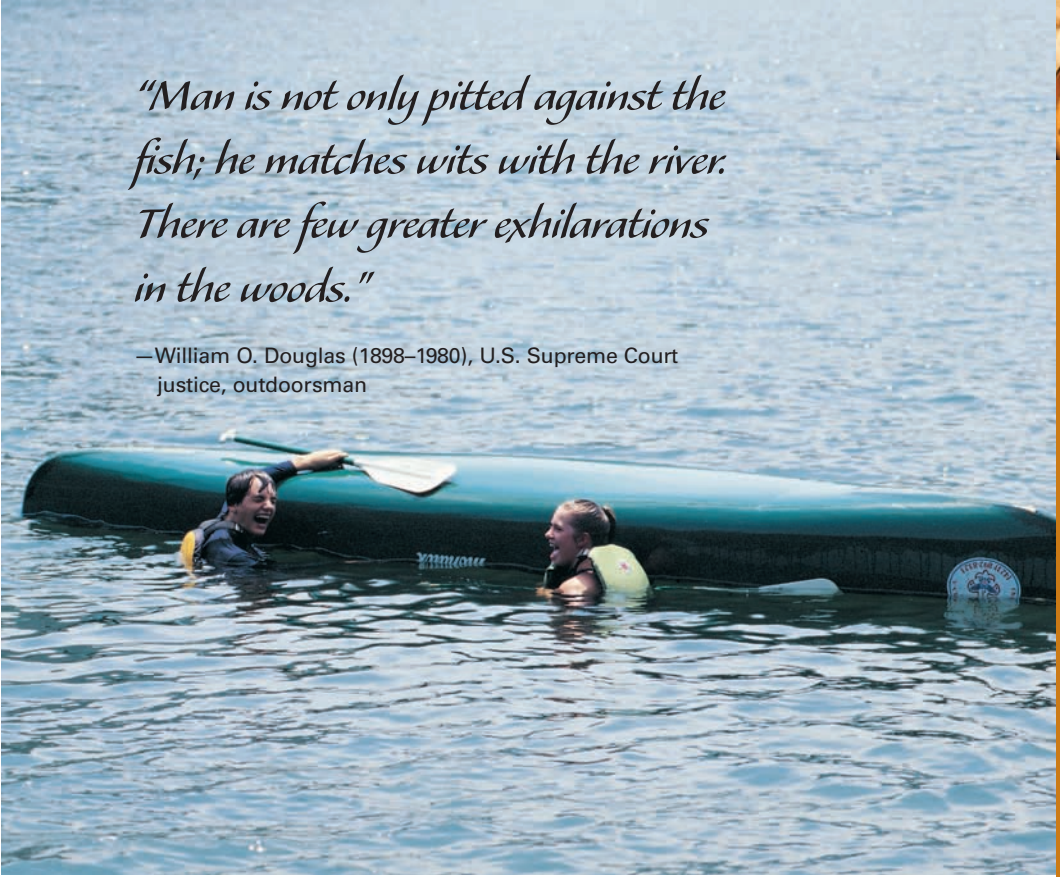
Position yourself near the bow of the canoe, your partner near the stern. Reach across the canoe and grasp the gunwales, then in unison lift the canoe and flip it over your heads, turning yourselves forward as you do. As your partner stabilizes the canoe, walk your hands backward along the gunwales until you can tuck your shoulders against the yoke. Your partner is free to duck out from under the canoe, and you are ready to begin a portage. Your partner leads the way as you walk, alerting you to obstacles or turns in the trail. If you tire before the end of the portage, lean the bow of the canoe into the crotch of a tree and rest the stern on the ground.



One-Person Portage Lift

With practice, one canoeist can lift a canoe for portaging. To begin, stand at one side of the upright canoe, near the stern and facing the bow. Grasp the gunwales, one in each hand, a few feet from the stern. Turn the canoe over and lift it over your head, allowing the bow to remain on the ground. Holding the gunwales, begin "walking" toward the bow. As you reach the center of the canoe, its weight will balance over your shoulders and the bow will lift off the ground. Ease the yoke onto your shoulders to carry the canoe.





Canoe Safety and Rescue

Safety is the most important word in canoeing. Every water sport has its hazards, but if you are aware of the dangers and are prepared to manage common risks, you can enjoy a lifetime of canoeing adventures without serious mishap.

For starters, you should be a good swimmer. Training in lifesaving will give you added confidence. While you are on the water, wear a PFD. Stay within shouting distance of other canoes in your party, and be aware of weather and water conditions. When paddling on lakes, keeping near a shoreline will allow you to get ashore quickly if a storm is brewing or if the wind whips up waves that make you uneasy.

On rivers, tie up your canoe and scout ahead on foot if the water downstream is rough or you have any suspicion that there might be snags, rapids, or drops. Before running a rapids, gather all the canoes in your group and plan not only how to navigate the stretch of white water, but also how to support one another should a canoe overturn. Precautions might include stationing people with throw ropes at the end of a rapids. If in doubt about the wisdom of paddling through any stretch of water, portage around it.

For more on canoeing safely and using throw ropes, see the chapter titled "Watercraft Adventure Safety." The BSA's Safe Swim Defense plan and Safety Afloat provide guidelines for appropriate ways to conduct activities in and on the water. For the full text of these publications, see the *Fieldbook* Web site.

Rescues

A canoe will stay afloat even if it is full of water. Usually your best bet after capsizing, especially on a quiet lake or stream, is to stay with the canoe. Rocking it back and forth might slosh much of the water from your craft. Climb back in, sit on the bottom, and use your hands or a paddle to propel yourself to shore.

If there are other paddlers nearby, they can bring their canoes alongside the swamped craft, assist wet canoeists, retrieve floating gear, and help get the waterlogged canoe to shallow water where it can be righted and repacked. (Never tie a line from a capsized canoe to yourself or your watercraft. A swamped canoe is heavy; if the current carries it off, you don't want to be dragged along with it.)

Every canoeist manages now and then to swamp a canoe. Intentionally capsize your craft in calm water and practice various kinds of rescues and recoveries until they become automatic. That way you'll know what to do when you upset accidentally.

Canoe-Over-Canoe Recovery

If paddlers capsize far from shore in a calm lake, a canoe-over-canoe procedure might be in order to empty a swamped canoe.

❶ Come alongside the capsized canoe on the side away from people in the water.

❷ Hold the capsized canoe and direct canoeists in the water to hang onto your canoe near the ends on the side opposite the swamped canoe.

❸ Swing the capsized canoe at a right angle to yours. As you raise the bow, tilt the canoe to let the water drain out. Then lift the canoe and set it on your gunwale.

❹ Ease the canoe across the gunwales of your canoe, scooting it along until it is balanced.

❺ Roll the capsized canoe upright on your canoe's gunwales, then slide it back onto the water.

❻ Hold the emptied canoe alongside yours and stabilize it as its crew climbs back aboard.

Packing for a Canoe Trip

For canoe trips involving overnight camps, you'll need all the gear a backpacker would use. Even though the capacity of a canoe allows you to carry plenty of cargo, pack light and tight. That will make it easier for you to complete portages and can increase the ease of traveling and camping without leaving a trace. Pack as if you are certain your canoe will be capsized, too, even though you hope it won't.

There are many watertight containers on the market for canoeists, rafters, and kayakers, or you can pack all your items into heavy-duty plastic bags. Close each bag with a *gooseneck* by twisting the top and then bending it over and wrapping it with a strong rubber band. Put the bags into packs or duffels lined with larger plastic bags such as trash-can liners and gooseneck those, as well. Stow cameras, binoculars, maps, compasses, lunches, and other items you'll want during the day in neoprene or nylon dry bags that can be rolled closed to keep out moisture. Double-bag anything that must be kept absolutely dry.

Secure each pack, duffel, and bag tightly in your canoe so that nothing can come out if the craft overturns. Put the heaviest gear on the floor of the canoe and lash everything to D-rings cemented to the floor or under the inside of the gunwales. Use short pieces of floating rope for tying in gear and leave no

more than a couple of inches of loose ends beyond the knots. If your canoe does flip over, you want everything in it to stay positioned deep inside the canoe where it will add flotation. Tethered bags that float out of the canoe will, at best, make righting the boat more difficult, and at worst can snag on obstructions in a river or entangle swimming paddlers in tether lines.

Canoe Storage and Care

Caring for a canoe between trips will ensure that it will be in top condition when you are ready to put it back on the water.

- Wash a canoe inside and out with fresh water. Check bolts, rivets, and other fasteners, and survey joints for cracks. Repair any damage.
- Regularly treat wood trim with a good marine finish. Several times during the canoeing season, apply an ultraviolet barrier to plastic trim and plastic boats. Follow manufacturers' instructions.
- Store the canoe upside down on a canoe rack or sawhorses.

"The canoe is the simplest, most functional yet aesthetically pleasing object ever created."

—Bill Mason (Canadian author, filmmaker, and canoe enthusiast), *Path of the Paddle,* 1984